GOVERNMENT OF INDIA
MINISTRY OF SCIENCE & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

LOK SABHA
UNSTARRED QUESTION NO. 5454
ANSWERED ON 25.03.2026

Bio-RIDE Scheme

5454. Shri Dharambir Singh:

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) the details of progress made under the Bio-RIDE Scheme;

(b) the steps taken by the Government to promote biotechnology startups in India;

(c) the achievements of Biopharma SHAKTI initiative;

(d) the role of science diplomacy in international cooperation; and

(e) whether the Government proposes to establish any new research or innovation centres in Haryana including Bhiwani–Mahendergarh region and if so, the details thereof?

ANSWER

MINISTER OF STATE (INDEPENDENT CHARGE) FOR THE MINISTRY OF SCIENCE AND TECHNOLOGY & EARTH SCIENCES (DR. JITENDRA SINGH)

(a) The Union Cabinet in its meeting held on 18-09-2024 approved continuation of DBT schemes namely, 'Biotechnology Research & Development', 'Industrial & Entrepreneurship Development' and a new component of 'Biomanufacturing & Biofoundry' as one scheme "Biotechnology Research Innovation and Entrepreneurship Development (Bio-RIDE)". Bio-RIDE scheme has been designed to foster innovation, promote bio-entrepreneurship, and strengthen India's position as a global leader in biomanufacturing and biotechnology. It aims to accelerate research, enhance product development, and bridge the gap between academic research and industrial applications. The scheme is part of the Government of India's mission to harness the potential of bio-innovation to tackle national and global challenges such as healthcare, agriculture, environmental sustainability, and clean energy.

The Department and it's Public Sector Undertaking "Biotechnology Industry Research Assistance Council" have been supporting research, development & innovation projects in

biotechnology sector along with human resource development and scientific infrastructure support which has resulted in generation of several publications, patents and also training of manpower. The DBT's ongoing efforts align with its vision of harnessing the potential of Biotechnology as a precision tool for national development and well-being of society to fulfill its mission to make India globally competitive in Biotechnology research, innovation, translation, entrepreneurship, and industrial growth and be a US$300 billion Bioeconomy by 2030. The significant achievements of the Bio-RIDE scheme are as follows:

- India's first in Human Gene Therapy with lentiviral vector for Severe Hemophilia A in a single center study resulted in an annualised zero bleeding rate in all the 5 subjects enrolled with the production of Factor VIII
- 'Framework for Exchange of Data Protocols (FeED)' and the Indian Biological Data Centre (IBDC) Portals were launched, making 10,000 whole genome samples accessible to researchers across India and the globe
- Scientific completion of India's First Indigenous Antibiotic, Nafithromycin, to Combat Drug Resistance was launched
- Data Driven Research to Eradicate TB – "Dare2eraD TB" programme completed sequencing of 20000 TB genomes, Garbh-Ini, the pregnancy cohort completed the enrollment of 12000 pregnant women to find solutions for better birth outcomes
- National BioPharma Mission (NBM) has successfully delivered 02 COVID-19 vaccines, ZyCoV D and Corbevax, biosimilar Liraglutide for diabetes, pegylated interferon alpha-2b for COVID-19, first indigenous MRI scanner, single-use bioreactors, 09 Covid-19 diagnostic kits, ventilators and reagents
- In a collaborative study, the BRIC-THSTI and RCB researchers have identified 7D, a small molecule from a library of compounds that has shown promising results *in vitro* and mice against dengue virus
- Two drought-tolerant chickpea varieties ADVIKA and SAATVIK developed by BRIC-NIPGR under this DBT program have been selected as promising pulse cultivars in Self-Reliance in Pulses Mission Initiative. These improved seed varieties contribute to over 30% of the total breeder seed indent highlighting their significant adoption among chickpea varieties released so far.
- Kisan-Kavach, an anti-pesticide suit designed to combat the pervasive threat of pesticide-induced toxicity in agricultural settings was unveiled,
- IndRA: The first-ever 90K Pan-genome SNP genotyping array IndRA developed for rice has been commercialized for public use,
- CIFA-Brood-Vac" has been developed which can prevent diseases and mortality of fish spawn
- Bacterial Blight resistant introgressed rice variety "Patkai": developed by AAU- Assam was notified by Central Variety Release Committee (CVRC)
- A rice variety ADT 39-Sub1 with tolerance to submergence released in 2025
- A drought resistant rice variety 'Arun' was developed by Assam Agricultural University, Jorhat, Assam and Assam Rice Research Institute, Titabar
- An Engineered Glucoamylase Secreting yeast strain as an import substitute during grain fermentation for 1G ethanol production was developed, A total of 52 bioinformatics centers across the country are advancing and enabling cutting-edge biomedical research.

- Echoing the Hon'ble Prime Minister's call for youth participation on 15th of August 2025, Dr. Jitendra Singh, Minister of State (IC) for Science and Technology, launched the "D.E.S.I.G.N for BioE3 Challenge"—themed "Empowering Youth to Solve Critical Issues of their TIMES" to empower grassroots innovators, foster youth-lead change, and strengthen India's journey towards sustainable and self-reliant bioeconomy
- Union Cabinet Chaired by the Prime Minister Shri Narendra Modi has approved the continuation of the Biomedical Research Career Programme (BRCP), Phase-III (2025-26 to 2030-31), with another six years (2031-32 to 2037-38), to service fellowships and grants approved till 2030-31, at a total cost of Rs. 1500 crore with DBT and WT, UK contributing Rs.1000 crore and Rs.500 crore respectively
- A recent experiment on the Axiom-4 mission, successfully validated the potential of microalgae for space-based applications. On the other hand, a first proof of concept for the growth of cyanobacteria on urea in microgravity was achieved. Further, human muscle regeneration was significantly impaired in microgravity, with reduced mitochondrial function and slower differentiation,
- DBT and IndiaAI, an Independent Business Division (IBD) under the Digital India Corporation, which is under the MEITY signed an MoU on 18th August 2025 for leveraging their respective expertise in biotechnology and artificial intelligence to drive innovation and development in India
- Signing of a Memorandum of Understanding (MoU) between DBT and ISRO for Cooperation in 'Space Biotechnology and Biomanufacturing' in October 2024, DBT and the Government of Assam on signed an MoU to set up a BioE3 cell and to formalize a strategic collaboration
- 'Guidelines on Genetically Engineered Plants Containing Stacked Events, 2025' were notified
- "Operational Guidelines for Implementing Scientific Entrepreneurship and Research Commercialization at iBRIC" were notified
- Animal Biosafety Level-3 (ABSL-3) Facility for Non-Human Primates was established at the Primate Research Centre, BRIC–National Institute of Immunology
- The One Day One Genome mission released 244 annotated genomes
- 75 BioNEST Centres and 19 E-YUVA Centres are contributing to a cumulative incubation space exceeding 9,00,000 sq. ft.
- The E-YUVA scheme of BIRAC has demonstrated substantial growth, expanding its national footprint from 10 to 19 pre-incubation centres across 15 States and Union Territories
- India's bioeconomy has expanded from about USD 10 billion in 2014 to over USD 195 billion in 2025, reflecting a massive growth trajectory over the past decade
- BioE3 Policy is driving Sustainable Biomanufacturing as Over 11,800 Startups Power India's Expanding Bioeconomy
- India's Bioeconomy Contributes Nearly 5% to GDP

(b) The Department of Biotechnology supports Biotech startup ecosystem though it's PSU Biotechnology Industry Research Assistance Council (BIRAC). BIRAC plays a key role in promoting industry-led innovation and supporting biotechnology startups through the structured programmes across biotechnology domains. BIRAC implements a range of programmes to support research, technology development, and commercialization through incubation, funding, mentoring, and industry partnerships. Key initiatives include:

- **Bioincubators Nurturing Entrepreneurship for Scaling Technologies (BioNEST):** Under this scheme, bio-incubators are established at universities, research institutes, colleges, biotech parks, business incubators, and State S&T institutions across the country.
- **Biotechnology Ignition Grant (BIG):** The Biotechnology Ignition Grant is BIRAC's flagship early-stage funding programme which provides grant-in-aid support of up to ₹50 lakh for a period of 18 months to startups for establishing proof-of-concept of innovative ideas. The scheme also offers end-to-end support including technical mentoring, regulatory support, and market linkages, enabling translation of innovative ideas into scalable technologies. More than 1000 startups and entrepreneurs have been supported under the BIG programme.
- **Empowering Youth for Undertaking Value-Added Innovative Translational Research (E-YUVA):** This initiative promotes innovation among students and young researchers through the establishment of E-YUVA Centres located within universities and research institutions across the country. A total of 94 incubation and pre-incubation centres have been established by BIRAC across 25 States and Union Territories, supporting 3000+ startups and student entrepreneurs under the above two schemes.
- **Sustainable Entrepreneurship and Enterprise Development (SEED) Fund:** The SEED Fund provides first-equity-based financial support of up to ₹30 lakh per startup to facilitate the transition from proof-of-concept to early-stage commercialization and enable startups to attract follow-on investments. To date, the SEED Fund has supported 153 biotechnology start-ups.
- **Launching Entrepreneurial Driven Affordable Products (LEAP) Fund:** The LEAP Fund provides equity-based support of up to ₹100 lakh per startup to accelerate commercialization and market entry of startups with validated technologies, supporting scale-up, regulatory advancement, and manufacturing readiness. So far, 62 biotech startups have been supported, catalysing private investment.
- **Social Innovation Programme for Products: Affordable & Relevant to Societal Health (SPARSH)**: This initiative leverages biotechnological solutions to address critical societal challenges. The programme supports early-stage social biotech startups by providing funding, mentoring, immersion opportunities, and incubation support, while also contributing to employment generation in India. Under the initiative, fellows receive a monthly fellowship of ₹60,000, a mini kick-start grant of ₹10 lakh, and access to mentorship, laboratory facilities, immersion programmes, and expert guidance in regulatory affairs, IP management, and commercialization.

The Department of Biotechnology also supports a program on Biodesign. The programme works on the principle of – Identify, Invent and Implement. This involves amalgamation of professionals and fellows from medical and engineering background, who through immersion programmes identify the need and then design a device or solution to address it. The fellows are encouraged to implement the solution through spin-offs. At present, six Biodesign Centers across the Country twining over 20 leading medical schools and technical institutions are providing the biodesign capacity building and indigenous med-tech innovations. Since inception, more than 250 med-tech innovators have been trained and more than 60 Start-ups created, through this initiative.

Further, the Department of Science and Technology (DST), through the National Initiative for Developing and Harnessing Innovations (NIDHI) program, has established incubation centres in academic and research institutions across the country. These incubation centres leverage the expertise of these academic/research institutions to promote S&T based Entrepreneurship and startup ecosystem; by supporting innovators, entrepreneurs and startups.

NIDHI is a comprehensive end-to-end Startup support Scheme to nurture startups from ideation to commercialization. It includes a variety of components for Startups like PRAYAS (for early-stage funding and mentoring), Seed funding and accelerators. For institutions, programs such as NIDHI Technology Business Incubator (TBI), NIDHI Inclusive Technology Business Incubator (iTBI) and NIDHI Centre of Excellence provide OpEx and CapEx support for setting up of Startup Incubators.

Other than above, Departments/ Ministries of Government of India such as Department of Scientific & Industrial Research (DSIR), Ministry of Commerce & Industry, Ministry of Micro, Small and Medium Enterprises (MSME), Ministry of Agriculture & Farmers Welfare and Ministry of Defence are also supporting startups in various technological domains including biotechnology.

(c) With a view to strengthen the domestic biopharmaceutical sector and enhance global competitiveness in biologics and biosimilars, the Government has announced the Biopharma SHAKTI scheme with an outlay of ₹10,000 crore over five years with an objective to build a globally competitive domestic ecosystem for biologics and biosimilars to support affordable healthcare in India and enable India to emerge as a global biopharma manufacturing and innovation hub.

(d) Science diplomacy is one of the catalytic instruments to support international cooperation, not just in scientific areas but also in various areas of development cooperation with international stakeholders to build a trusted relationship between nations. The Government is taking proactive efforts to adopt innovative ways of pursuing our scientific diplomacy with key partner countries and stakeholder international organisations. The Govt has supported R&D bilateral partnerships with several countries, including Switzerland, Sweden, Australia, Netherlands, Belgium, Germany, Canada, South Korea, UK and the USA. Multilateral partnerships have been established with the European Union, BRICS, G20, Human Frontier Science Program (HFSP) and European Molecular Biology Organization (EMBO). The Govt. through Ministry of Science & Technology has also partnered with international philanthropic organizations such as the Gates Foundation (USA), and the Wellcome Trust (UK).

(e) The Department of Biotechnology supports research, development and innovation project proposals including proposals to establish any new research or innovation centres in institutions across India under the competitive research grant mechanism.

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